

## REMARKS

### **I. Status of the Claims**

Original claims 1-78 are present in US Patent No. 5,573,648 (the '648 Patent), as originally issued. New claims 79-85 were previously presented, along with the request for reissue on July 17, 2003, and claims 86-94 are newly presented above.<sup>1</sup> Applicants respectfully request examination of claims 1-94.

### **II. Introduction to the '648 Patent**

As discussed in the Reissue Application Declaration by the Assignee, at the time of filing patent application 381,718, which issued as U.S. Patent No. 5,573,648 on November 12, 1996, Applicants failed to claim inventive methods and apparatus disclosed in the specification of the '054 patent. Applicants filed this reissue application to remedy such error, and Applicants directed claims in the previously filed Preliminary Amendment (shown as "previously presented" in the claim listing above) to the inventive methods and apparatus disclosed in the original specification filed on January 31, 1995, but not originally claimed.

Applicants have now directed additional claims in this Second Preliminary Amendment (shown as "new" in the claim listing above) to the inventive methods and apparatus of claims 79-85, with improved syntax or other clarifications or refinements. For example, to avoid any possible confusion as to process language, the text of claim 79, "the sensing electrode reacting with the gas to produce ..." has been used in new claim 86 as "the sensing electrode being capable of reacting with the gas to produce ..." There is no difference in claim scope. Also, several of the new claims recite expressly the room temperature aspect of the claimed invention. Also, claims 92-94 more expressly recite the

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<sup>1</sup> In the event that the reissue application and the existing reexamination proceeding are merged, new claims 79-94 should be renumbered.

feature implied by the 2-electrode aspect, that is, that the claimed electrochemical gas sensor is non-biased.

The claims of the '648 Patent are directed to gas sensors that are operative to sense a gas in an ambient atmosphere. The gas sensors include sensing and counter electrodes each having both an electronic conducting material and an ionic conducting material and a protonic conductive electrolyte membrane between and in contact with the sensing and counter electrodes. The sensing and counter electrodes have both an electronic conducting material and an ionic conducting material, and the electrolyte is a membrane between them. Gas sensors of the '648 Patent do not require a biasing electrode. Thus, they do not require a bias voltage drain on a power source for sensing of the gas. Thus, the life of any battery used in a commercial sensor covered by the '648 Patent, *e.g.*, a sensor for use as a residential CO sensor, is extended because the battery is only needed to power an alarm.

### **III. Support for New Claims 86-94**

Support for new claims 86-94 may be found throughout the specification, claims, figures and abstract as originally filed. Support for new claim 86 may be found, for example, at Figure 1, at claim 1 and Col. 5, lines 30-42.

Support for new claim 87 may be found, for example, at claim 1 and Col. 3, lines 35-37.

Support for new claim 88 may be found, for example, at Figure 1, claim 1 and Col. 3, lines 35-37.

Support for new claim 89 may be found, for example, at Figure 1, at claim 1; and Column 7, line 67 to Column 8, line 1.

Support for new claim 90 may be found, for example, at Figure 1, at claim 1 and Col. 5, lines 30-42.

Support for new claim 91 may be found, for example, at Figure 1, at claim 1 and Col. 3, lines 35-37.

Support for new claim 92 may be found, for example, at Figure 1, at claim 1 and Col. 5, lines 30-42. The non-biased aspect is supported also as an inherent feature of a gas sensor, as claimed, having only two electrodes in electrical contact with the electrolyte membrane.

Support for new claim 93 may be found, for example, at Figure 1, in claim 1, and at Col. 5, lines 30-42.

Support for new claim 94 may be found, for example, at Figure 1, at claim 1 and Col. 3, lines 35-37.

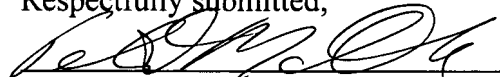
#### **IV. Conclusion**

Each of claims 79-85 presented in the previously filed Preliminary Amendment and each of claims 86-94 presented in this Second Preliminary Amendment is directed to subject matter that was originally disclosed but never claimed. Applicants request entry of the claims and examination of the application.

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Date

Respectfully submitted,



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